

THE MINING AND METALLURGICAL JOURNAL.

FORMERLY THE PACIFIC COAST BULLION.

VOL. XVI., No. 11

LOS ANGELES, CAL., MARCH 1, 1897

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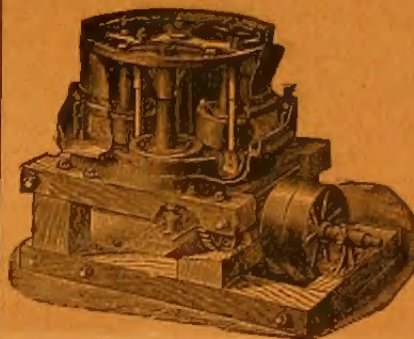
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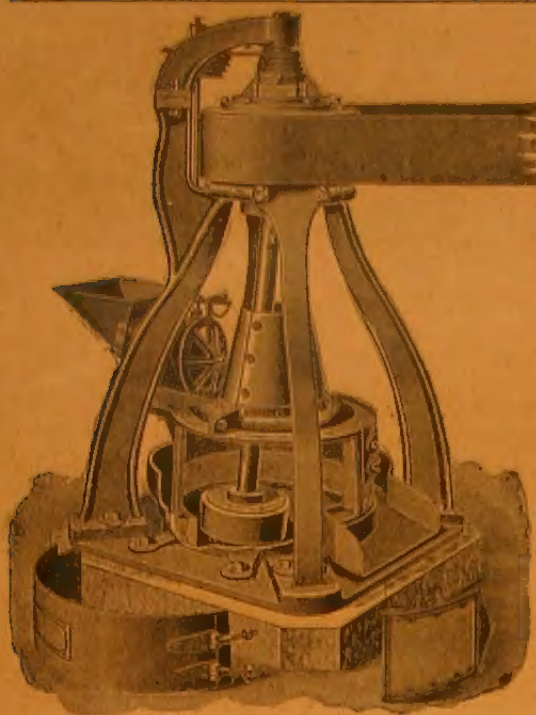
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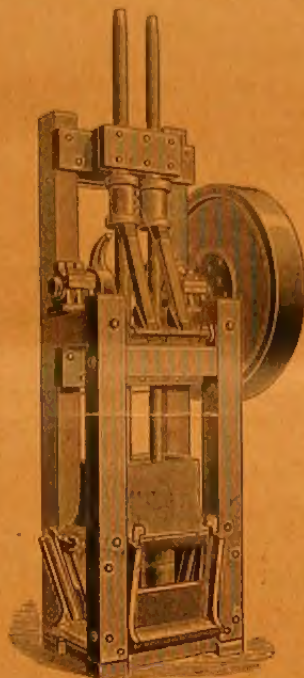
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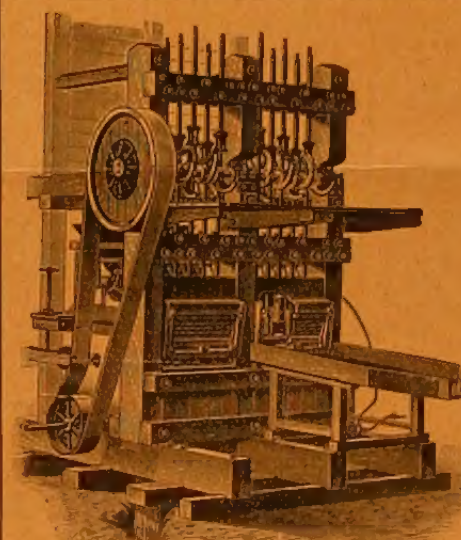
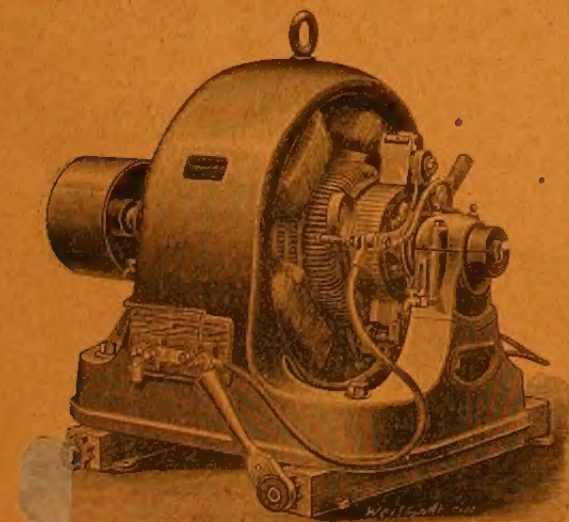
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LIONEL A. SHELDON,
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OWING to unavoidable delay in obtaining valuable data, without which our description of the Randsburg mines would be incomplete, we have decided to postpone the illustrated article we intended to have appear in our issue of March 1st to March 15th. So many things have been written of a misleading nature concerning the district that we find the undertaking more difficult than we anticipated, and intend to bring out the facts as we found them. The prejudices of many of the wise men against the district do not seem so serious, however, when it is considered that two of the greatest gold camps in the United States, Mercur and Cripple Creek, were both pronounced to be in the wrong formation. We believe gold is where you find it, and at the present time a great deal is being found on the desert, and from the indications now it would seem that the desert is the coming country for gold mining.

A NEW STATE MINERALOGIST.

The efficiency of the State Mining bureau has been brought up to such a high standard by Mr. J. J. Crawford, who has been state mineralogist for the last four years, that his removal will be regretted in every portion of the state. He worked night and day for the interest of the bureau and the results speak for themselves. The bulletins that have been issued have been distributed in all parts of the world and have advertised the mines of California as nothing else has. This JOURNAL has always advocated the importance of the bureau and believes it should be well supported by the state as it is the most important institution in the state to the miners. California stands at the head of every state in the Union in gold production and has an area of undeveloped prospective mining territory large enough to accommodate all the capital now seeking investments within her borders.

While we regret the departure of Mr. Crawford we are glad to know that his successor, Mr. A. S. Cooper of Santa Barbara, is a thoroughly practical man and has been identified

with mining in California for some time. He has been extensively interested in the development of oil in Southern California and understands the requirements of the miners.

The MINING and METALLURGICAL JOURNAL extends its greetings to the new state mineralogist and feels sure the State Mining bureau will continue to be under his management what it has been under his predecessors.

WE are pleased to know that Professor R. A. F. Penrose has received almost the entire endorsement of Arizona for governor. He is young, intelligent and thoroughly identified with the territory and the people should stand solid for him and not allow the administration to send some broken down politician they wish to be rid of to Arizona for governor. The citizens do not seem to realize what the right kind of a governor means for them in the next four years. It means the reservations will be opened up for settlement; it means that money will be appropriated to build dams; in fact it means everything for Arizona. Prof. Penrose has the influence in the east to bring about these benefits for Arizona, and we hope the citizens will not stand in their own light. What Arizona needs is a man of action, a man who has extensive interests in the territory himself and consequently is interested in the prosperity of the territory, and such a man is R. A. F. Penrose, who will be the next governor and who will be the best one the territory ever had.

THE UNEMPLOYED.

All populous countries have had to solve the problem of providing employment for their people. That problem is now upon this country, and work must be provided. It is humanitarian to feed the hungry and clothe the naked, but that cannot be done for a great length of time and for a large number of persons without such drafts upon resources that will produce impoverishment and bring want to the doors of ever increasing numbers.

This is not the worst of it, however, for idleness and impoverishment sap the foundations of manhood and when a large number of the American people lose self-respect a blow is struck at the good character and perpetuity of our free institutions. If dependence does not rob of virtue, it does of independence and when that is gone a man is not fit to be a participant in public affairs as a voter.

Our institutions are not so much in danger from anarchy as from the enslavement of men through poverty and want. The monarchs are always organized and act compactly, and they can and do always control the corrupt through bribing. If these two harmonious classes are reinforced by a large number of people who are needy and dependent there is real danger to a government by the people. The money power, knowing that its interests depend upon the control of the government, seeks to enlarge the number it can command by corrupting some and by the adoption of financial, commercial and industrial policies favorable to itself increase the numbers who can be controlled through dependence.

The remedy is to clip the wings of the monocrats by enlarging the money volume until it becomes too great to be wholly held in banks to be loaned to Wall street speculators on United States or other equally good bonds. Money will be put into enterprises that will afford employment when there is so

much that it can not be loaned at exorbitant rates of interest and not till then.

We have a suggestion to make, and it is that the unemployed in this city rent a small piece of ground each and go to raising vegetables, run out the chinamen and control the market. A good citizen, one who has any Americanism in him, will be willing to pay a white man a little more for his vegetables than he will the non-citizen mongolian. It will be better for the country, better all around to have cultivators of the soil who will keep their earnings in this country. The Chinese send to Asia large sums annually.

And Americans must not feel that it is too undignified for them to cultivate the soil, to perform manual labor. It has to be done and under a free government there must not be serfs to do it. Manual labor is honorable, but begging or living on the charity of others is degrading when it can be avoided.

No more ignorant and debased Europeans should be permitted to come to this country to work in competition with or by the side of intelligent and high minded Americans.

SENATOR WOLCOTT.

The movements of this gentleman have been most remarkable. It is the first time in the history of this government that an individual has deputed himself to sound foreign governments on a question of the gravest importance. A senator has no authority to engage in a diplomatic mission by virtue of the position he holds. It is contrary to common sense for a government to communicate what it will do to a person with no ambassadorial powers. When the government deposes to one authority to represent it, foreign powers will listen and make some kind of an answer.

Wolcott went off with a flourish of trumpets and he has been blowing his little horn ever since he has been on the other side of the Atlantic. Aside from his own pretensions all the evidence is to the effect that though he has been courteously treated on account of his senatorial position, he has hardly been listened to respectfully, but has elicited no favorable response. Any other result could not have been expected, and no man of sound judgement would have gone on such a wild-goose chase. He has done only harm and should be ignored and suppressed. Every step taken in the nature of importuning European governments to oblige us, is hurtful to the cause and humiliating to America. The position this government should assume is one of demand, and not one of supplication, one of independence and not of dependence.

A PROTECTIVE TARIFF AND TRUSTS.

Admitting that a protective tariff is a good thing, is there not danger that trusts will be allowed to control the production and distribution of the protected articles? The practice has become general to form trusts to fleece the masses, the parties to them make large profits to the impoverishment of the people.

If we are to have a protective tariff there should be a provision in the law authorizing the president, in case a trust is formed to control production of any protected article, to reduce or take off the duty altogether by the issuance of a proclamation. If there is reasonable doubt as to the existence of the trust, let any citizen be empowered to institute an investigation in any federal or state court to have the fact established.



Schaw, Ingram, Batcher & Co's Pipe Works, located on the line of the S. P. R. R. at Sacramento. These buildings are all covered with Corrugated Iron, and are exclusively devoted to manufacture of sheet Steel Pipe.

PARITY OF THE TWO METALS.

There are pretended bimetalists, who want to preserve what they call parity of the two metals. The law authorizing coinage of gold and silver will fix the money parity. It is impossible to fix and maintain a commodity parity so long as the mints are open to one metal and coinage is denied to the other. Gold has no distinct commodity value. The quantity required to be put into dollars will sell for one hundred cents, neither more nor less. Whoever wishes gold for use in the arts and manufactures will not pay more for it in bullion than the sum he can get it for in the coin, and the owners of the bullion will not sell for less than its coinage value, for he can take it to the mint and have it coined. It is a fact not generally known, or if known, is not appreciated, that gold coins in large quantities are melted and used in the arts, because they are as cheap as gold in bullion form.

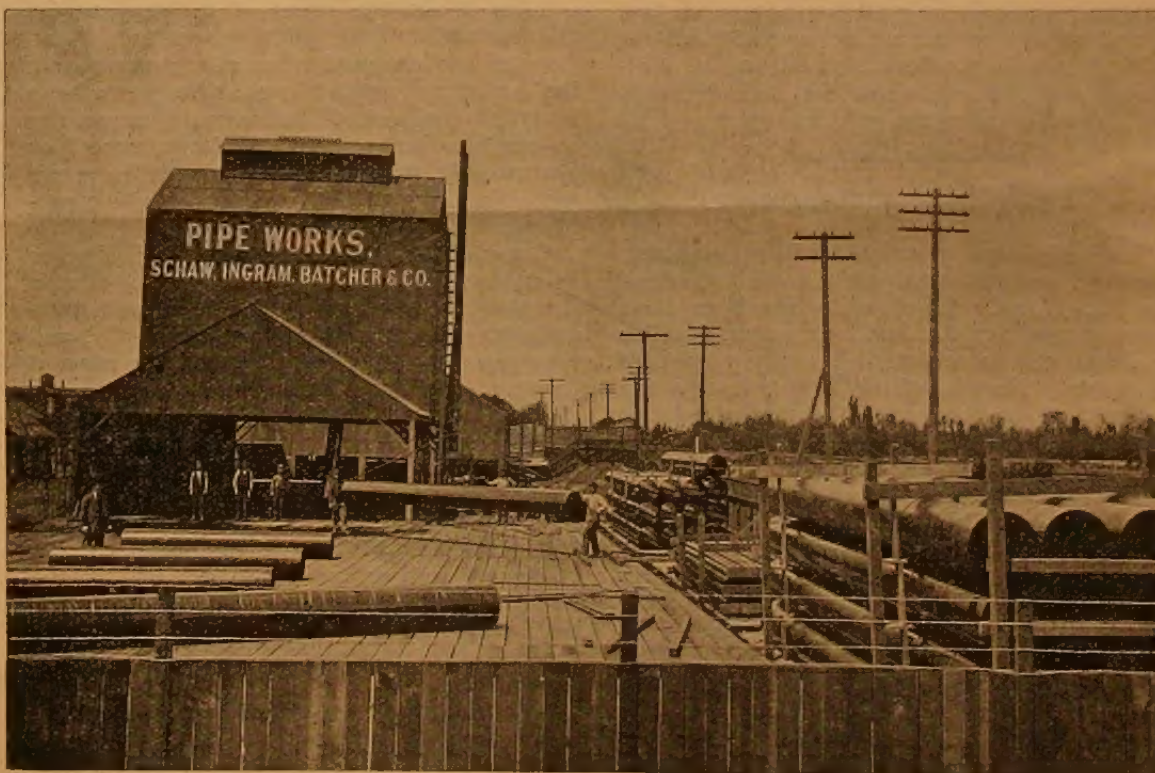
Beyond this the holder of gold bullion can send it to the bank of England which by law is required to pay £3, 17 shillings and 9 pence for every ounce of gold presented at its counter. This law was enacted by parliament and is enforced that the price of gold may not fluctuate. This and freedom of coinage keeps gold at an unchangeable price.

On the other hand silver being denied mintage has only a commodity value, which changes under the law of supply and demand. If twice as much gold in weight were produced in the world as silver still the market price of gold would not change so long as it may be freely converted into coin and is the measure of value by weight, not to speak of the fact that the Bank of England is compelled to purchase it at a prescribed price.

What the commodity ratio is between the two metals can only be determined by demonetizing both. After experimenting for a considerable period it may be that something near the ratio of value could be fixed, though prices would fluctuate under the influence of supply and demand. No one can say what

25.8 grains of gold would be worth if the mints were closed against gold coinage.

If the mints were as accessible to silver as to gold its money and commodity values would be alike, the same as it is with gold. There then would be no talk about fifty cent dollars, nor to the effect that soundness of money depends upon redemption with gold. This parity talk is misleading, it has duped many a man who possesses a good average of intelligence. When both metals are put upon the same basis as to uses then a parity can be established that will not appreciably vary.



This photograph shows the Dipping House, Storage and Loading Platform, and Railroad Spur of the Schaw, Ingram, Batcher & Co., showing how their pipe is loaded on the cars after it has been coated with a hot solution of double refined asphaltum and malta which renders the pipe almost indestructible. Everything is admirably arranged for storing and easily and conveniently loading pipe on the cars.

One of the recent factories started in Sacramento, Cal., is the Hydraulic Pipe Works of Schaw, Ingram, Batcher & Co., for the manufacture of sheet steel and iron pipe for mining, power and irrigating purposes. Their shop is 75 by 100 feet and their building for dipping and storage is 34 by 144 feet. These buildings are located along side the railroad, thus insuring loading without chafing or abrasion of the coating which always occurs when newly dipped pipe is hauled on trucks to the cars.

During the past year they have shipped large quantities of pipe to different parts of California, Nevada, Colorado, Utah, Oregon, British Columbia, Arizona and Mexico. They have just finished putting in a water system for the town of Lincoln, Placer Co., Cal.

Employment is given in these works to thirty-five skilled pipe makers. Being equipped with the most modern appliances, they manufacture the best pipe on the coast, not only in quality of material used but the general workmanship and finish is unexcelled.

In dipping their pipe they use only pure asphaltum and maltha, coal-tar having been discarded by experts as being too inferior for pipe coating.

The firm also conducts a large general hardware business at 211 to 219 J street, Sacramento.

CORRESPONDENCE

CALIFORNIA.

Thirty Days on the Colorado River in a Flat Boat.

Scenes, trials and casualties of a party of three, and general observations of the mining possibilities along the river, from the Needles to Yuma, a distance of 320 miles.

After one week's preparation in outfitting, we left Los Angeles Jan. 16th, at 10 A. M., via the Santa Fe R. R. to the Needles, nothing transpiring en-route with the only exception that the cars were pretty much left to us at Mojave by passengers who were bound



An inside view of Schaw, Ingram, Batcher & Co's shop, where the Pipe is cut, punched, formed and riveted.

for Randsburg. By 11 o'clock that night, we landed at the Needles, getting Joe, our dog out of the baggage car and looking after our luggage, which was rather numerous, and having it safely stored, we hunted up the hotel Vanderbilt, the landlady of same assigning us to a room. We being in very gay mood and not very sleepy, I am afraid some of the folks in the house were not altogether well pleased, especially when one of our party got that saw mill snore well under way, for which he got so famous during the trip. One of our party, being unable to sleep, took Joe and went out in town just before daylight, running into a couple of Indians who had been out all night, i. e., he came back and reported that he did not think it safe to walk around in the dark, that there must be something wrong with the electric lights.

After taking breakfast at the Chinese restaurant, there being none other, we went to the lumber yard, employed a carpenter and went to work on a flat boat or scow. We could not agree upon the size. Our early riser suggested that 10x24 feet ought to be a safe size, and as the river looked pretty large, he thought the boat ought to be in proportion, but, after due consideration, it was cut down to 6x16 feet, which was found to be amply large for a party of five or six. By 4 o'clock it was loaded upon a wagon and conveyed to the river, where we pitched our tent for the first time; by that time it was quite dark, and shortly after 7 we turned in. That was the longest night we ever experienced. We awoke at 10:30, thinking it would soon be day light, but when V. looked at his watch, by the aid of a match, and saw the time, we went to sleep again. So we awoke a number of times. Stiff and sore, daylight found us only too glad that morning had come—the sun was just brightening the eastern sky. Well, by 10 o'clock we pushed off, wondering where the steamboats were that we had heard of in Los Angeles.

This being the first time either of us were ever on the Colorado River, we were naturally a little timid. The water has a brick-dust appearance, and runs about three miles

per hour, cold as ice water and settles in a bucket in a few hours, and is the very finest water for all purposes. The river is from a quarter to one mile wide. Sand bars lurk one inch below the surface, and cannot be seen until you run upon them; but there is very little difficulty experienced in getting off again. The sand washes away under the boat and she will turn round and round. We named it the Colorado River waltz; but one must look out for snags which are numerous.

By 4 o'clock we landed at the R. R. bridge, some 18 miles below the Needles. After passing the bridge, the trip has to be accomplished, there is no turning back.

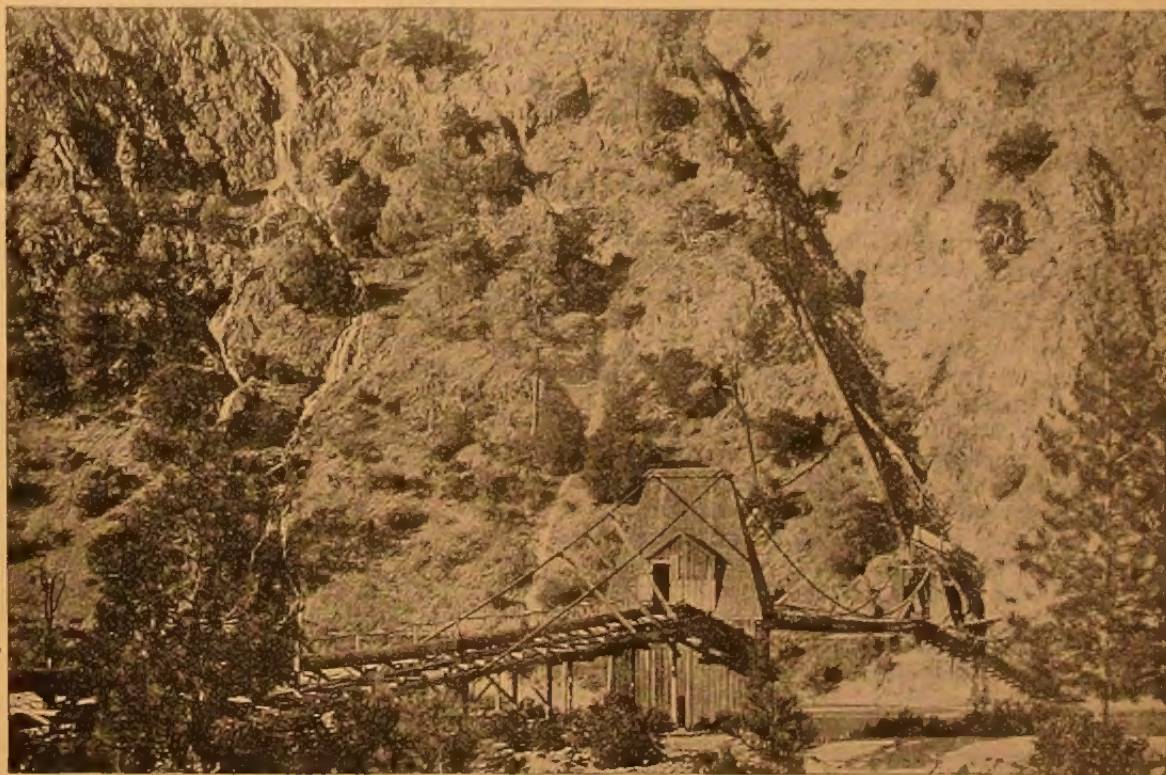
The scenery is fine from here to Parker—the Indian Reservation. Tall peaks line the Arizona side, abrupt cliffs, balancing rocks, huge shelves, huge sand piles deposited where high water in the past has left them, with willows and brush growing, otherwise everything is bare, only some giant cactus growing out of a crevice of the bare rock.

Aubrey is the first place that is upon the map. The remains of an impoverished smelter, some copper-stained rock, which has been hauled there from a mine 21 miles back in the mountains, five or six decayed adobe houses. Not a sign of life anywhere. Some old machinery scattered about, and only visited by flat-boat tourists who happen that way. A few miles below, the Bill Williams empties into the Colorado. It is quite a stream. The day before we passed there, a poor prospector tried to ford the Williams with three burros, and came near drowning the outfit.

We were meeting lots of Indians working their way up the river. Now, if any one thinks that this is an easy job just let them try it. Usually there were two squaws in the boat and two bucks pulling at a line at the edge of the shore—first in the water then in the mud—bare feet, an undershirt and a pair of overalls constitute an Indian's wardrobe. With the squaw it is different. She has, in addition to a calico dress, four red bandana handkerchiefs sewed together, which is used as a cloak. They paint, even the papoose has red paint on its face, besides other ornaments.

We asked of everyone we met how far it was to Empire Flat? Some said 25 miles, some said 75.

By noon, the seventh day out, we got to Billy Mack's camp, 125 miles from the Needles. We went ashore, where we found an old 5-stamp mill in rather a bad condition, but some very nice ore in the bin. We were told that he was getting ready to run through 20 or 30 tons; but we were unable to see how he could do it with that mill. The mine is two miles back on the Arizona side. Two



The above photograph represents a portion of the Pipe Line of the Cie. Fée des Placers Hydrauliques, in Trinity county which Schaw, Ingram, Batcher & Co. has furnished. Part of the pipe is laid over a rocky bluff 800 feet incline and in a perpendicular rise 530 feet.

miles up the river is Adams' Camp. The ore is good, but there are no defined ledges, it is more like a quarry. We also found a couple of prospectors here who told us that Dr. Grear, a man 75 years old, had some good property. The ore in this section all shows considerable copper, decomposed quartz and iron, with a little galena, and is very base.

The next day, at 2 P. M., we sighted the water works or pumping plant, $1\frac{1}{2}$ miles above Parker, Mojave Indian Reservation. We went up and saw the agent, S. M. Drenna. There are thirteen white people stationed here, and we saw the flag of our country floating in the breeze from a high pole. There are some 800 Indians here, who live principally upon mesquite beans.

It took us five days to get to Ehrenberg, here we pulled our boat out of the water, engaged an old residenter to take our outfit up to Fryer gulch. He first wanted \$10, but finally took us for \$5, we walking all the way. Fryer gulch 30 years ago was a bonanza. La Paz had a population of 20,000. There are three miles of houses, deserted years ago, and, in fact, not a soul is now seen anywhere. They say the streets of Ehrenberg were paved with gold. Old man Goodman thirty years ago owned the ferry, and his income from it alone was from \$300 to \$450 per day. The few white men who still remain make a very poor living.

There are still a number of old Mexican families who have been there for thirty years, and once counted their gold by the pound. They seem to be happy in the simple way of living that they have. They do dry washing and say that they can earn from 75c. to \$3.00 per day. Sometimes get on to a spot where they take out from \$200 to \$400 or \$600 in a week, but they are few and far between—the diggings having been worked over and over. The gravel bars having been tunneled and drifted on bedrock, and are perfectly honey-combed. Water cannot be applied, as it is 8 or 9 miles to the river, and lies pretty flat, so that the tailings could not well be disposed of. The quartz ledges in the vicinity are something wonderful, of low grade, and would average from \$8 to \$10 per ton, half free milling. The veins are big, between coarse granite, and stringers can be found everywhere, some are very rich. Some water from the rains can be found in places, but gives out in summer.

Twelve miles further east is Tyson. This is the coming camp. The finest quartz ledges are located here. A 5-stamp mill has just been put in operation. Placer mining is also very good here. As the ground belongs to nobody in particular, any one can dry-wash wherever he chooses here.

After looking this country over for 10 days, we engaged a Mexican to convey our things back to Ehrenberg. We offered him a sack of flour and 100 lbs. of potatoes. He asked what the potatoes were worth? We told him 6c. per lb., and he refused; then we told him 3c. and he jumped at it; but not getting any more, we could not see where he made anything by the transaction. After caulking our boat, we loaded up and pulled out. Battling with a strong head wind for two days, we landed a little weary for the night on a huge sand bar, 50 miles below Ehrenberg, and about 45 miles from Picacho, in California.

The next mineral belt opposite Picacho is a large silver and lead belt, but nothing is being done there.

At Picacho and vicinity there is some activity, a number of stamp mills are being erected and some mines opened. A very fine pump-

ing plant is being removed for some cause which we could not get the facts of. Some good placer ground exists three miles back, which this plant was to work. Senator Dorsey is looked for with anxiety. They say he is coming with a heap of money to put up a 100-stamp mill. The ore is low grade but abundant. There is more or less mining going on down the river for thirty miles.

Two miles below Picacho, we saw our first real steamboat towing a barge. This was a beautiful sight indeed, as she appeared coming around a bend in the river. They can't get very far up the river at this time of the year, as the water is quite low. We watched the boat until she was out of sight.

A few miles further down, we met Mr. Richey, who is putting up a 10-stamp mill for a big mining company. We accepted his invitation to dinner with thanks. The next day we had a fine wind in our favor and made Yuma, being out now 29 days, and getting no letters from home in this time, we disposed of our stock of groceries, mining tools and boat, the next day taking the train home, but agreeing that the trip on the Colorado River cannot be excelled for health, sport and knowledge.

Remaining respectfully yours,

W. A. FREEBERG.

OAK GROVE, P. O., Feb. 22, 1897.

EDITOR JOURNAL:—JOURNAL received for which thanks. L. T. Chambers has just arrived from Los Angeles with a load of tools, machinery, etc., and will at once commence work. While in town he organized a company, of which he is the representative. It is his intention to break ground on the King of the Hills mine.

This is a grand property. The vein by its outcrop being well defined for a distance of 800 feet, with an average width of 10 feet. The Progress, Valley View and Crown Point veins have a good surface outcrop and average 4 feet in width. These four constitute what is called the Western group. The Altha and Crown Point veins averaging 4 feet in width, and showing well in free gold from the Eastern group. Both groups are on the main vein of the country, which has been traced for a distance of 12 miles following the contact.

The Mint mine is to have a new mill, which will be in place the last of March.

At the Cripple Dick the crosscut is being pushed as fast as possible. In now about 55 feet, having struck good working ground. Expect to cut main vein soon.

The late storm has retarded work somewhat, but all will be driving ahead in a few days.

Respectfully,

J. A. BAILEY.

Miscellaneous Mining News.

ARIZONA.

Prosperous Mohave.

R. J. Hartman of Kingman, now in Phoenix, says that Mohave county in its palmiest days was never so prosperous as now. Fortune has smiled upon the two chiefs, and, in fact, the only industries of the county, mining and cattle, so that there is more money in circulation than ever before. Within the past year from \$800,000 to \$1,000,000 in cattle has been shipped from Kingman. Besides this influx of cash, the public sampling works in Kingman is distributing in the way of royalties to

chloriders from \$60,000 to \$70,000 a month. In addition to this about thirty cars of ore are shipped to the smelters monthly without sampling.

There has been an increase of activity in all the mining districts tributary to Kingman and many new properties have been opened. Prominent among them is the Wallapai Gold Mining company, composed of South African operators with a pool of \$5,000,000. The head of the company is a man who made several million dollars in South Africa and was a partner of Engineer Hammond, one of the principal participants in the Jameson raid. He himself was implicated in the Transvaal affair and his connection with it cost him a million. Soon after that the Mohave county pool was formed. It was different from a very large majority of mining enterprises in this territory in that it was backed by an abundance of both capital and experience. One of these important incidents is usually lacking. The pool bought the Grounds property in the Music Mountain district. Operations were begun less than thirty days ago.

Another new enterprise is the Excelsoir Mining company composed of English capitalists. They bought valuable property of R. T. Root of Denver in the White Hills district and began with a capital of \$2,000,000. The company is actively putting in a forty stamp mill. Twenty twelve horse teams are engaged in hauling material for the mill, water lines and hoists. A hoist is now being constructed on the Hidden Treasure, which already has a 1000 foot shaft. A pipe line will be put in to the Colorado river eighteen miles distant.

R. T. Root has purchased the Great Basin mines of Patterson & Shaffer and is putting in machinery for operating it on an extensive scale.

The Cedar valley properties in the hands of the Cedar Valley Gold and Silver Mining company are looking up after a long period of idleness on account of mismanagement. An experienced mill man proved to the owners with a five stamp mill that it was possible to save the value of the ore and the construction of a forty stamp mill has been begun.

The Connor-Minnesota, people, chloride process, are running their mill to its full capacity and are receiving handsome monthly dividends.

These, say Mr. Hartman, are just a few indications of the general happiness prevalent in Mohave county.—*Phoenix Republican*.

John J. Gibbons of New York was in Globe last week looking into the affairs of the Kasser Gold Mining company in which he is a large stockholder. He was accompanied by his son, John C. Gibbons, and his brother, Niles W. Gibbons, who is engaged in mining near Roseland, B. C. The visit of these gentlemen is believed to foreshadow the reorganization of the Kasser company and resumption of work.

The group of gold mines above Clifton, owned by Mase, Greenlee, Tevis and others, has been bonded to a New York company for a large sum, the exact amount not learned. It is understood that the company pays \$15,000 down and takes a working bond for six months. They intend to put a large force of men at work and thoroughly develop these properties. A townsite has been located and a large mill is to be erected at an early day.

The shaft of the Congress mine is now down more than 1700 feet and has been in pay dirt all the way.

Reports come from Lynx creek that T. O. Barley-Masicks' hydraulic works are running night and day; 800 cubic yards of dirt, running from forty to sixty cents a yard in gold, are being moved every twenty-four hours. The big boiler for the steam shovel is being put in place. How the boiler ever reached its destination with the roads in such bad condition is a matter of marvel to those who have seen the engine and the roads.

The copper deposits at Skinnerville, near Dripping Springs and twenty-five miles south of Globe, are attracting considerable notice and development work is being done on a number of claims in that locality. Among the most promising are the Copper King and Rattler, owned by W. H. Sutherland. Over 800 feet of work has been done on the Rattler during the past six months, and the mine has improved steadily and now shows good bodies of ore.

San Carlos Notes.

At present the Copper Belle, on Garden Gulch, near Parks' camp is down fifty feet.

The ore body varies from eighteen to thirty feet in width and will average from 15 to 18 per cent copper and from \$6 to \$8 gold. The ore is of a sulphuret character with abundance of running water in the gulch close by to supply reduction works of any capacity, also abundance of wood. Altogether there are ten locations on the vein, all showing good ore; the most promising are the Copper Idol, the Crack Cabinet and the Copper King, all in porphyry and lime contact.

The names of locations which have been worked are the Lucky, Jim Longfellow, Mammoth, Pacific, Green Mountain, Mayflower, Clipper, United Verde, all showing from six to eight feet of ore which will average from 20 to 30 per cent copper and from \$15 to \$20 in gold and from 30 to 40 ounces in silver.

Hinderson Crow and others in sinking uncovered a three and one-half foot vein of clear coal which makes the second vein encountered; as the third vein is most generally the best and most compact they expect to reach that at a little more depth probably a fourth as all indications tend that way.

As soon as the survey is approved, this section will attract much attention as a mining center as the mineral there is, both in quantity and quality, easy of access, with wood and water in abundance.—*Graham Bulletin*.

Work at Pearce is progressing rapidly and before the summer months come it will be quite a large camp.

Professor Blandy has made a careful compilation of the copper output for Arizona and finds it foots a total of 63,323,788 pounds.

The copper mines near the Grand canyon back of Flagstaff are bonded to eastern capital and are developing into big producers.

Many prospectors are at work along the Dragon range. A mill will be erected at the Pearce camp in the spring, and there is inquiry for good copper and gold claims.

The Etta mill, near Jerome, will resume operations in a few days after being shut down for a year. The Etta mine continues to turn out good ore. The shaft is down 200 feet and the tunnel is 300 feet in. The ore in the Etta runs from \$12 to \$40 per ton.

One blast in the Eureka mine lately shot down \$1200 worth of gold ore. There may be mines that beat the Eureka, but we are not acquainted with their location. The ore grows richer as depth is reached.

The coal fields and mineral district out from the San Carlos reservation, Arizona, are not yet open for settlement and will not be for several months, the details of the survey not having yet been completed, so no legal locations can be made.

Mr. W. C. Ellis has discovered and located a valuable mine about four miles from Nogales. He has a ledge four feet or more in width, and from the croppings is sacking ore for shipment. Samples tested by Charles Taylor show 3800 ounces of silver and \$100 per ton gold in the ore.

The Mineral Creek mining district gives promise of rivaling Cripple Creek. At present there are about fifteen men working at different properties. The Jimmie's Luck Gold Mining company had thirteen claims surveyed about two weeks ago, all of which properties are on well defined ledges.

It is reported that Wm. Stiles and Felix Mayhew of Casa Grande have sold their recently discovered copper property, a few miles south of that town for \$60,000, and that a smelter will be placed on the ground at once. It is understood that the Silver Reef properties have just changed ownership for a consideration of \$75,000.

Owing to an insufficient supply of water the Old Glory mine near Oro Blanco was shut down. Word has been received of heavy rainfall and plenty of water enabling the resumption of work. These mines pay handsome dividends and a large force of men is at work with pick and shovel and the Old Glory has assumed a busy aspect.

Geo. Clemens of Central and Mr. Dibbles of Thatcher went last week to a mineral ledge which Mr. Bailey found several years ago in the foothills east of Bailey's wells. They prospected a claim to the depth of five feet and the result was most encouraging. A vein averaging eighteen inches in width assayed \$100 in silver and \$18 in gold. Next week they will return and complete the necessary amount of work required before filling a location notice.

James Shirley has received some samples of ore from the Mayflower mine, Castle Creek district, which is being worked by Col. A. O. Brodie. This ore runs about \$20 in free gold and these samples will run about 40 per cent copper. The ledge is eight feet wide and the property is a very promising one. It may be remarked here that the gold in this district is absolutely free. In one mine there, which has been developed 100 feet below the water level, the ore is just as free of sulphurets as it was on the surface. Col. Brodie has six men at work on the Mayflower.

The Little Jessie mine, the property of Hon. J. S. Jones, paid a dividend last month of 18 per cent, despite bad weather and great expense of obtaining wood. A. J. Doran is superintending the work and at this rate the rich property will soon be out of debt.

A Prosperous Outlook.

Chas. F. Kuhn came over to Tucson from Casa Grande, February 23d, and brought with him the evidence that he has not been working in vain in his mining properties be-

low Casa Grande. He recently purchased the Mammon property, and begun active work there at once. He has had the mill running and brought with him a large chunk of gold with which he made a payment on the property. He has succeeded after a great many discouragements and an incalculable lot of hard work in getting an ample supply of water at his Golden West property, to run a 100-stamp mill and has a force of men at work night and day.

The district below Casa Grande is attracting a great deal of attention in mining circles of late, several sales having been recently consummated there. The mountains are rich in mineral, and with such earnest workers as Mr. Kuhn in the field, the country is bound to come to the front and take the place it deserves in the list of mineral producers.—*Citizen*.

CALIFORNIA.

KERN COUNTY.

From Randsburg.

A correspondent who has just left Randsburg writes: The mines continue to go down and continue to pay to this date. No one can say they will not both go down and pay.

The owners of the King Solomon group have a steam hoist on the road. When it arrives they will sink to a depth of 600 feet. This will prove whether the vein goes down, and will settle the future of Randsburg.

Owen Owens one of the best miners in this county spent several weeks at Randsburg. He is not very favorably impressed. He says the formation is granite, and while there are several promising surface prospects, he is doubtful if the ledges will go down. Two mills are running.

RIVERSIDE COUNTY.

The latest news from the Virginia Dale mining district was brought in by J. M. Morris, who, with Samuel Cunniff of Cucamonga, has a group of four very promising mines in that section about six miles from the Virginia Dale group. He started for home Tuesday noon, Feb. 23d, before the commencement of the storm, but caught thirty-six hours of it on the road, mostly rain with a little snow, stopping at Whitewater half a day on account of the storm.

He reports his shaft down nearly 40 feet in a four-foot ledge with a growing width as they go down. Two of their claims are end to end and the other two side by side near the others, all of them being at the foot of the mountain, where they can be reached easily by team. The traction engine ordered by the new purchasers of the Virginia Dale, mentioned in *The Sun* a few days since arrived the morning he left, having made the trip from the railroad easily, the 20-inch tires being excellent road makers. Where there is too much sand, if brush or rocks are thrown down in front, they roll it down hard. Part of the road between the mill up to the mine is sandy, but by a little work it can be rolled into fine shape. He pronounced it a complete success.

Virginia Dale expects the arrival of a distinguished party next week from San Francisco. It will number 10 to 15 expert miners and engineers, who are coming down on an investigating tour, bringing along their own tents and equipment, and propose to examine carefully and critically every mine in Virginia

Dale District. As there are at least 1000 mines more or less developed in that district, it is evident they have a large job on hand. It is supposed they are sent down by a syndicate of capitalists who wish to investigate the prospects before purchasing. Should their report be favorable it will bring a development of that section that will build it up rapidly.—*San Bernardino Weekly Sun.*

SAN BERNARDINO COUNTY.

The mines in San Bernardino mountains are steadily progressing.

The Rose mine is drifting on the 700-foot level on good ore, taking out some rich shipping ore. The burning of the assay office is not satisfactorily settled; it was evidently the work of an incendiary to cover up some speculations.

Big Smith has a couple of men working with him on his prospect near the Rose.

J. W. Smart is working on a rich stringer in Cook's canyon assaying as high as \$200 per ton.

Al Watts has done his assessments on his various claims.

McKee is sinking west of the Rose in hope of striking ore similar to that mine, but as yet without success.

Mr. Pratt of Pomona is sinking on a prospect north of the Rose.

O. G. Leach of the Black Hawk mining district, has made a deal with R. F. Harrison, the manager of the Rose, and the Llewellyn Brothers of Los Angeles for his Opera mine.

Mr. Cochran and others of Los Angeles, have taken hold of the old Driscoll mine, in Dry Lake district. They are down 75 feet, and the bottom of the shafts shows some good ore.

It is said that Mr. Means of Dry Lake district, has refused the offer of San Francisco capitalists who lately experted his gold properties in that district.

Ed Dolch, the merchant of Victor, is having some work done on his gold mine in the old Coxe Ranch district. The ore assays from \$37 per ton, up.

E. C. Chappell is taking out his second carload of ore from the same district. Samples show value of \$120 per ton.

The Valley Gold company is to resume operations in the spring under the management of W. E. Peedley, M. E., again.

The Green Lead people have struck a good body of ore that is likely to go \$15 to \$20 per ton in gold. This is a lucky strike for the indefatigable owners who have been working under difficulties.

COLORADO.

(Extracts from Mining Investor.)

Badger Creek.

A month ago this camp was comparatively unknown; today it has an estimated population of at least 200 people in camp alone and probably twice as many in the district and increasing at the rate of at least 25 or 30 a day. The camp already possesses some 30 permanent buildings, twice as many tents, and at least 20 buildings in process of erection. This camp is reached by stage from Salida and Freshwater, and next week a third line will be in operation from Bath.

Aspen.

Ed. Wilson and associates, who are working the Iron mine on Richmond hill, under lease, are showing ore taken from a strike they have made that will mill about \$250 to the ton. On last Monday the men broke into an extensive body of ore at a depth of about 350 feet. They are arranging for shipment.

Word comes from Lenado that a seven-foot body of ore has been encountered in the Tillie mine at a depth of 300 feet. Assays show 40 per cent. lead and 10 ounces in silver. It is a lime ore, and in view of the advancing price of lead the strike is considered an important one.

A rich strike is reported on the property of G. W. Holmes of Gunnison. It is situated near Spencer, and is called the Gunnison lode. The value is an average of about \$70, with a very large body of ore.

The new thirteenth level on the Mollie Gibson, it is expected, will yield the bonanza, which failed to materialize on the new twelfth, that has been so thoroughly prospected.

The upraise on the Inez tunnel, has nearly reached the surface, now being in slight rock. When the connection is made it will give ample air to the tunnel. The work of driving the tunnel has been prosecuted vigorously.

Woodland Park.

Ira Merrill, manager of the Butcher Boy mine at Woodland Park arrived in Denver, Colorado, a few days ago, and brought the news of one of the most important strikes made in Colorado since the discovery of Cripple Creek. The strike was made on the west side of Gold hill on patented ground belonging to a Mrs. Matthews, and when Mr. Merrill left the camp people were going in from every direction and the ground in the vicinity of the claim had been staked off for long distances.

George E. Harrington and Frank McKinley, who are interested with a syndicate of Fort Worth railroad men, have sent a check to St. Louis for a 20-ton water jacket smelter. The smelter will be on the ground in 30 days and will be erected and in operation by April 15.

Work has been recommenced on the Kickapoo No. 1, from which \$68 in gold and \$38 in silver was obtained. A fault was encountered which delayed development for a time, but work is now to be vigorously pushed.

B. S. Smith and Charles McKinnis are down 60 feet on their shaft and in 50 feet with a tunnel the ore increasing in quantity and value in both openings. A sample will shortly be shipped for testing.

Browning & Hudson who are working a lease of 20 acres, given by the Wheeler Town-site company, will soon have a car load of ore ready for shipment.

Hackman & Meek are working three shifts on a shaft on Gold hill under the supervision of L. A. Dreyfoos. The vein matter upon which they are sinking shows numerous samples of free gold and assays have been obtained running as high as \$350.

Idaho Springs.

In Spring gulch the Chicago Belle is sinking the shaft as rapidly as three shifts of men can put it down. The ore streak, which has amply repaid from grass roots increases in size and going from 18 to 40 ounces gold and about \$100 other values per ton.

Near the Chicago Belle is the Jack Rabbit, owned by Mr. Charles Howell of Denver. This property is also sinking its shaft to meet its tunnel and it is reported that fully \$40,000 worth of ore is blocked out.

In the neighborhood of the above mines is the Old Pioneer, worked by lessees, who are taking out ore running from \$80 into the hundreds. There are about 20 leasers in this mine and shipments are heavy.

Some very good ore is being taken from the old Freeland mine. Hawke brothers and Goyne & Co. are doing well on their leases and Traylor & Co. have recently made a shipment that ran very well. They have an 18-inch streak in the Platte tunnel which looks well.

The Toledo is working right along. The property is intelligently handled and continues its large shipments of \$200 ore.

A shipment from Olds & Co., leasing on the Lamartine, netted \$200 per ton.

CHAFFRE COUNTY.

On the D. C. C. the contractors are taking out eighteen tons per day. They put the ore on the dump for \$1 per ton. It is delivered in the mill for 60 cents per ton. This is cheap handling of ore, but the D. C. C. vein is six feet wide and easily mined.

The Bon Ton, owned by Geo. Martin, shows up well for a new find, eighteen inches of the vein samples \$13 per ton in gold at a depth of ten feet.

The Belmont, owned by L. Galino, is being steadily worked by the owner. He has his tunnel now in on the vein 175 feet and keeps pushing it on into the hill taking out ore every day. He is a worker.

On the Silver Bell, Paul Glasser is busy taking out rich ore. He has two feet of ore three-fourth ounces of gold per ton.

Pine, Shaul and Mero have resumed work on the Bell of Granite. They have opened a new ore chute, 300 feet west of the old workings. This is very rich in free gold. Nearly everybody is glad to see the owners in possession again.

John T. Long and Geo. Martin are pushing down the shaft on the Dundee. They are now 45 feet deep and have a great prospect for a big mine, as there is but little doubt but they have the New Years' vein. They will push the development all winter and spring. They have quite a dump of mill ore that pans free gold and a fine lot of smelting ore sorted out.

LAKE COUNTY.

The Result began work last week under the management of Ed. Chapman. A shaft was put on and twenty men will be engaged at once. The manager intends letting contracts for the work shortly, but at present is paying \$2.50 a day and has no trouble in obtaining men at these wages.

The Henrietta lease began operations last week with John Canning as lessee. He was formerly a foreman for Eben Smith. About thirty men will be employed without reference to their being members of the miners' union and the scale of wages will be \$2.50 and \$3 a day. The operation of the Henrietta is an encouraging beginning of the resumption of work on some of the smaller leases. A temporary cessation of work was necessitated by the fact that ice had gathered in the shaft and some cleaning will be required before ore can be mined.

EL PASO COUNTY.

The manager of the Blake lease, on the south end of the Spicer, has begun sinking again on the shaft, which is now 140 feet deep. A drift was run 90 feet south on a vein of very good looking rock, but as neither wall could be found it was determined to sink further and locate the lead in place if possible.

The Bryant lease on the Lottie, on the west slope of Bull hill, is preparing to sink another 100 feet. The shaft is now 125 feet deep and has produced the richest ore ever taken out in the district.

The Vinton Bros. lease on the south end of Victor townsite is making good progress on the east drift, which is being driven toward the lead which runs about 50 feet east of the shaft. The drift has been driven 35 feet from the 100-foot level. Hoisting is still being done by means of the windlass.

The company which owns the Coyote on the south slope of Little Bull mountain has just added another shift to the working force, making three shifts now employed. The shaft is down 300 feet and it is rumored that an ore body of magnificent proportions has just been encountered. The management refuses to divulge any information for business reasons and the only particulars that can be obtained are to the effect that the lead is four feet wide and the ore averaging over \$100 in value.

MEXICO.

Mr. Dudley H. Norris, the well known lawyer, has just returned to the City of Mexico from New York where he was successful in organizing a company to take up and operate a group of mines at Guanacevi, State of Durango.

In regard to these properties Mr. Norris spoke as follows during the week to a representative of the *Mexican Financier*:

"The mines were the property of Mr. Francis H. Husted, and consist of the Anita, Lucero, Bridgeport and Comadre. These mines were denounced by Mr. Husted and have now been transferred by him to the company. Mr. Husted was in New York for a couple of months upon this business, and when the arrangements were all completed, I went to New York to put matters in legal form. A 20-stamp mill is now in course of erection at a mile site near the Anita, and 10 stamps will be in operation within a very short period. The system will be concentration and subsequent amalgamation of the tailings.

"This will be the eighth mill erected in Guanacevi, the other mills being the Barradon, with 30 stamps, the San Luis, 30, the Capuzaya 20, Sirena, Trigueros and Kleinschmidt. In addition to these there is the Arianena, which is now about completed and which will have 30 stamps. A plant for another—the Rosario—has been ordered from Germany. Altogether, as soon as these mills are completed, there will be over 150 stamps dropping in Guanacevi, and the total supply of ore to keep these mills busy will not be less than 300 tons. The system of working the ores of Guanacevi, some few years ago, was roasting with salt, and subsequent amalgamation. The loss was considerable in this treatment, especially as the gold is liable to be volatilized. They afterwards tried lixiviation but at present the favorite system seems to be concentration. The ores contain sulphides of lead and iron and a very considerable proportion of gold. The concentrates run

from 250 to 300 ounces of silver per ton, and the expense of freight and treatment, including transportation to the railroad, has been about \$45, Mexican silver, per ton, leaving a very handsome margin. Formerly the freighting between Guanacevi and Jimenez was principally in salt and other supplies for the mines and in general merchandise needed by the mining population at Guanacevi and the amount of ores and concentrates shipped out was comparatively small, so that the wagons went into Guanacevi loaded and returned empty, but since the mills have gone into concentration, the reverse is the case and there has been an immense accumulation of ores and concentrates at Guanacevi owing to the lack of transportation facilities to the railroad. The present problem is to find some means of transportation of ore and concentrates to the railroad, because, as the distance is very great (170 miles), it seems to be impossible, with the present methods of transportation, to further increase the output without materially increasing also the cost of getting ore and concentrates to the smelters, for the reason that, without something like equality between the amount of incoming and outgoing freight, the charge for hauling would become excessive; instead of \$45 per ton the cost would be liable to amount to \$60 or even higher.

"There have been some very rich ores shipped from the Barradon, the Predilecta, the Rosario, San Luis, the Arianena and other mines of the district, and I expect that with further development upon the properties our company will have its share of good ore.

"Our mill has been designed after very careful study of the conditions existing at Guanacevi and was built by Fraser & Chalmers. We think that it will be successful in treating the ores in that district and saving a large percentage of the precious metals contained therein.

"The name of our company is the 'Negociacion Minera de Anita.' The officers are Joseph M. Macdonough, president; Dudley H. Norris, vice-president; Henry S. Norris, secretary and treasurer; Francis H. Husted, general manager; and John R. Harbottle, superintendent.

"Guanacevi has been the center of speculation for the last three or four years. Like all such centers, it has not resulted fortunately for everybody concerned, and, for a time, suffered in consequence of its not coming up to the expectation of investors. There is no mining camp in the world of any importance that has not had the same history and Guanacevi is following the course of Leadville, Deadwood, Virginia City, Cripple Creek and South Africa. Today, however, Guanacevi is in splendid producing condition and as mining there has settled down upon a firm business basis I believe it will continue for many years to come to be one of the principal producing camps in the Republic."

NEW MEXICO.

Cook's Peak.

Geo. Kresge and Jud Allen are said to have found the lost lode. George was over to Cooks from Hanover and is highly elated over the discovery.

There has been another large body of ore struck by Mr. Wm. Kieff. It is said to be over 200 feet from the surface and is still going down, showing that the ore bodies of Cooks are more than surface bodies.

There has been quite a good strike made in the quartzite by Messrs. Douglass & Co., on the claim bonded from Carr & Wolskey. The ore is in the form of heavy galena, carrying sulphide of silver. This discovery means a great deal for Cooks district as it will cause prospectors and capital to investigate the large belt of quartzite lying to the east and north of the lime belt.

Gearheart Bros. are still working on the Spanish Beauty claim adjoining the El Paso properties on the south. The indications look very favorable.

Black Range.

John Mack put a crew of men at work on the old Black Knight mine this week. This property is situated near the apex of the Black range about one mile south of the Silver Monument mine.

Hon. Quinby Vance, who has been in town for several days, returned to Hermosa last week. Mr. Vance is the owner of the Columbus mine, one of the most promising properties in this district, upon which the annual assessment for 1897 has been completed. The property is now in first-class shape for the pursuance of further development, the 82-foot shaft having been newly timbered from top to bottom and new ladders put in the entire length of the shaft. Recent work has penetrated the heretofore existing extremely hard ground which has given away to softer formation through which is exposed a pay-streak, that will average about one foot wide, of high grade bournite ore.—*Black Range*.

Bland Notes.

(From Bland Herald-Weekly.)

News from Peralta canyon says, the Climax, the God Help, the St. Charles and Northland are busily working.

Messrs. Hart and Walker intend to soon begin work on the Chief, once known as the La Roja, a valuable claim in the west fork of Colla canyon.

The Washington road has again been repaired and two teams, hauling six tons of ore daily to the railroad at Thornton for shipment to the Pueblo smelter, were put on at that mine.

The lessees of the Black Girl have got out a little over a carload of ore and intend to begin shipping as soon as the snow and ice on the road to that property has thawed sufficiently to permit the passage of a team.

During the absence of Henry Lockhart, the manager, the Crown Point mine has been under the superintendence of Thomas Williams and is producing the usual amount of ore.

Joe Garcia has struck some fine free gold quartz somewhere near Bear canyon, the southern extremity of the Cochiti district, and the yellow metal shows all over the specimens shown us. These specimens very much resemble in character similar specimens seen from the Carley and Aranda gold strike at San Pedro.

Besides letting a number of contracts for work on the Albemarle and Pamlico, S. P. Mahan, representing Howell Hines of Cleveland, Ohio, to whom the property has been leased and bonded, has put a force of men at work under wages. The total number now working on the Albemarle group, including contractors and company men, is sixteen, and by the 1st of March this force is to be greatly increased.

Charles A. Siringo, manager and secretary of the Sweet Cabin Home Mining company, leasing and bonding the Good Hope and Hopewell, and owning other mining property in the Cochiti district, came over from Santa Fe, his headquarters, last week, in the interests of his company, and while here made some investigations with a view of obtaining some of the larger properties for certain capitalists. It was through the efforts of Mr. Siringo that the Albemarle group was brought to the notice of Howell Hines, the prospective purchaser of that property, and it is not at all improbable that through him more transactions of like nature could be consummated if the owners of mining property in this district develop more claims sufficiently to show what they possess.

The Lone Star is working a force of only six men, but with this comparative small number is produced close upon 12 tons of ore a day, three tons of which is sent daily to Thornton, from which place a carload of that mine's valuable ore is shipped to Pueblo every five days. The remaining nine tons of ore is all saved for mill treatment and will average \$20 to the ton. It is estimated that there are about 4000 tons of this ore on the dump at the Lone Star mine, and thousands of tons of medium and high-grade ore are in sight in the workings of this enormous property.

Gold Hill.

The Gold Range Mining company is having ore from the Nancy Lee, Reservation and Standard mines treated at the Wood's mill. The results seem to be satisfactory to the owners.

Work on the shaft of the Western Belle has been discontinued at a depth of 93 or 94 feet.

A sale constituting a number of properties in this camp to a wealthy English company is on the tapis. An expert has been on the grounds and his report to headquarters has been submitted.

Kline and Keister have sold the Nancy Lee mine to E. B. Foster.

Schneider and Sharp are working three men on the Lottie and are taking out some good ore.

Myers and Hornbrook are working two men on a claim south of the Rusaw.

Hachita.

Weems and Anderson have made a big strike on the Copper King. Three men are kept constantly at work shoveling out ore which assays 110 ounces silver to the ton, are fully 1000 tons of this ore in sight, with every indication pointing to an unlimited supply yet lying undeveloped.

Gleason and Ryan are working three men on the Hornet with good results.

The Smelter Blows In.

The smelter of the Cliff Mining and Smelting company at Chloride, N. M., blew in Monday morning, February 15th, at 1 o'clock and by 7 o'clock was drawing slag. Everything about the plant works like a charm and is bound to prove a winner. Success to the new enterprise!

Near Elizabethtown, N. M., there have been made discoveries of gold ore, and it is claimed that 75 pounds from the Black Copper mine assayed at the rate of \$100,000 a ton.

UTAH.

Mercur Notes.

The Mercur deal was declared off Wednesday, February 24, Capt. DeLamar surrendering his option. The Captain is a good man for any camp, but those who do not believe in one man controlling too much territory, and the stockholders generally, are glad the deal failed. The company propose at once to enlarge the mill to a capacity of 300 tons and push the development of the mine with vigor. Stockholders are anticipating an extra dividend the first of the month.

The Wonder shaft is down this week to a depth of 650 feet. Delay has been occasioned by the breaking of the water line, causing a stoppage of the machinery for several shifts. During the earlier part of the week the formation was so full of fissures and potholes that progress was slow, but a firmer foundation is being met with at present.

The force on the Gladstone is making good headway. The shaft has attained a depth of 175 feet and is being continued rapidly. Ten men are employed on the property and Manager Cory has selected No. 1 men for every position on the property. The Gladstone is all right and will be heard from later.

Plans have been changed at the Hecla, owing to the opinion of some of the operators, that the vein had already been passed through. Consequently a drift was started this week at a point in the shaft 480 feet from the surface, where a promising formation was cut.

Jim Hagan, who has secured a bond on the Gold King property, near Manning, commenced work thereon Tuesday, February 23d. He has great hopes of developing a paying property.

Work is being prosecuted steadily on the Gypsy Queen, at Manning, owned by the Studebakers, and reports from the property are excellent.

Tom D. Pitt of Corrinne was in camp the 25th ult, posting patent notice on the Nina consolidated group, east of the Mercur mine.

White sulphur has been encountered in the Gladstone shaft. Sulphur is regarded as a good indication of ore in this district.

On the Gypsy Queen, at Manning work is still prosecuted with excellent results, and assays from \$4 to \$22 are reported.

Geo. Dern and Dr. Geo. Haslem, of Fremont, Neb., are developing some claims on the west side, near Stockton.—*Mercur Mercury*.

Bingham Notes.

Work has been temporarily suspended at the Badger, owing to deep snow.

Manager Strickley will have started another shipment from the Montezuma on Feb. 26th, the second that month.

About 20 tons of good-looking ore were hauled down from the Bonanza group Wednesday, Feb. 24th, for shipment.

Nine carloads of ore were ready for departure, Feb. 26th. Five to six cars has been the average last week.

Johnny Jimpson on Saturday, Feb. 20th, finished hauling an 80-ton shipment from the Storey mine, that promises a good return.

Nearly all ores leaving Bingham depot last week were coming from the Old Jordan & Galena and Telegraph mines.

Reports to the contrary, there is no water to bother in the Julia Dean, and that mine never looked so well as at present.

Fred Thomas has begun work on his contract to extend the main tunnel of the Mohawk 50 feet. It had been driven 750 feet when work was suspended last spring.

The Mayflower and Evergreen mines, located above the Dalton and Lark and formerly noted among Copper Gulch producers, are reported to have just been bonded by Messrs. Walsh and Wilson, promoters of the matting process talked of to replace the old Lead mill, and the fact is considered an assurance that the works are not only to be constructed this spring, but on a scale that warrants the acquirement of tributary property in connection with that of the Dalton & Lark company, for whom the mill is to be built. The Mayflower and Evergreen are old locations, quite extensively developed and with good ore bodies practically proved up, but having been idle a long time they are in bad shape and it will require some work and expense to put them in order. The Mayflower was once celebrated for its product, having outputted 10,000 tons of high grade ore in a period of two years; while the Evergreen, after shipping several hundred tons of ore, shut down about ten years ago. What ever may have been the cause of suspension of operations on these properties, it has been well understood in Bingham that it was not lack of good ore, and all they needed to make them profitable was proper development and management. What the immediate intentions are of Messrs. Walsh and Wilson in connection with the handling of these mines is not certainly known, but it is understood that they are to be operated under one management and will shortly be the scene of considerable activity.—*Bulletin*.

GENERAL NEWS.

The Victor Vapor Engine.

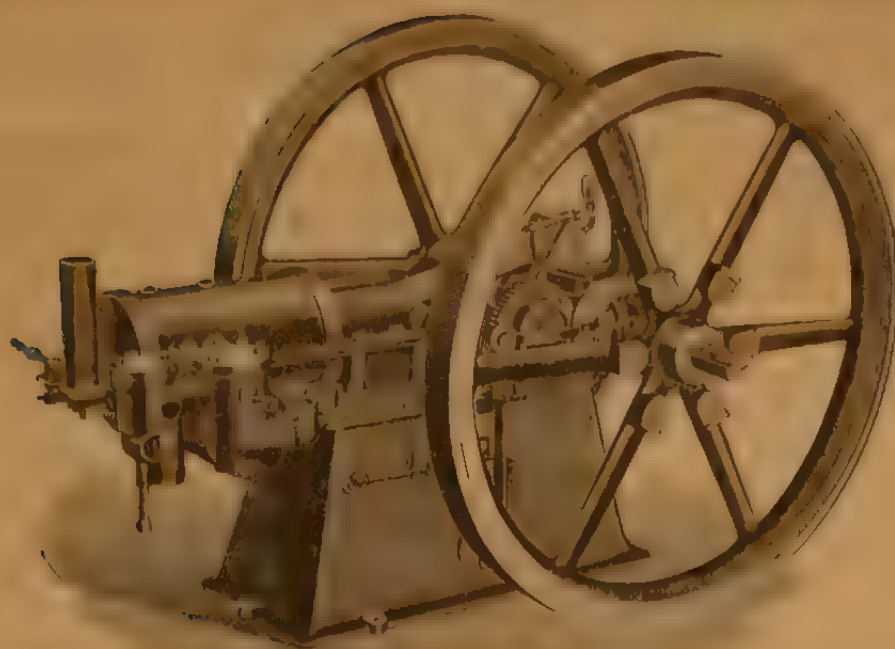
The vapor engine trade is peculiar. Steam can be seen; gas is invisible. The power of steam is produced by expansion; the power of gas or vapor by explosion, hence a knowledge of steam is of little or no value in running a gas engine.

The tendency for many years has been to make gas engines complicated, whereas, if properly constructed, they are simpler and more easily understood than steam. Again, the greatest demand for steam engines is from people who are familiar with machinery. Exactly the opposite is true regarding the demand for gas engines, hence the necessity for simplicity.

There are probably thirty or forty different styles of gas engines now being manufactured. In many particulars they are of necessity so nearly alike that one description would practically answer for all. For instance, they all claim "Economy of Fuel," "Economy of Space," "No Expense when not Running," "No Danger," "No Engineer Needed," "The very best Material and Workmanship," etc., etc.

Of course, the manufacturers claim all these excellencies for the new engine, but they also claim a great many more. Quite a number of their claims are peculiar to the new Victor, while others are very decided improvements.

One of the important features of the Victor is that the manufacturers guarantee the horse power as represented. In a great many instances where the horse power is given of a



THE VICTOR VAPOR ENGINE

gas or gasoline engine, it will only do the work for a short time, but when run steadily for ten or twelve hours, it will not do the amount of work claimed for it. There is no guarantee.

The general description of a gas or gasoline engine includes almost every part that enters into its construction, but it is only the most important that is worthy of your special attention.

Nothing but the very best of material and workmanship is employed in the Victor. Examination is conviction, and they can be compared with any other engine on the market.

The working parts are all on one side, are adjustable, in plain sight, and can be easily removed if it becomes necessary.

These engines are built extra heavy throughout, thus insuring great strength, and when so desired, they can be run with perfect safety at a much higher speed than rated.

The Victor engine has a very sensitive governor, double fly wheel, and the speed is absolutely steady at all times, the throwing on or off of load making no perceptible change. This engine is especially adapted for running dynamos or any other class of machinery where certainty and regularity of speed is essential.

There are only two valves on this engine; these are of the poppet type, easily accessible, and no fine adjustments are necessary, and is up to date. It has every improvement to be found on any other firstclass gasoline engine, and a number of very valuable features of its own.

In simplicity of construction, the new Victor Vapor engine is practically unrivaled, in consequence of which there is an ease of starting, ease of adjustment and accessibility of parts. These three features are of very special importance.

The electrode is the weak point in most gas engines. All "contact" electrodes are more or less failures. In order to get the best results, there must be both the "scrape" and "spring" motion. This engine has both these features. By a novel, yet very simple method, the electrodes are always kept in the same position, and at the same time insure its long life. One of these 3 horse power engines, fully loaded, was run for more than a month, and during that time it did not miss a stroke, and the electrode was never even examined.

Another very important feature these en-

gines possess is the way the feed is controlled. There is no gravity feed. The fluid is pumped from below the level of the engine. The tank containing fuel oil may be outside and at any reasonable distance from the building. It is practically impossible to flood the engine with fuel. The surplus fluid is carried back to the source of original supply.

A plain unvarnished fact is that there is scarcely an article in the entire list of manufactured machinery of which it may be so emphatically and everlastingly said with truth that "the best is the cheapest" as of gas engines.

Measured by price alone, the Victor is not a cheap engine, and it never will be so long as the present manufacturers, Thos. Kane & Co., of Chicago, Ill., control its manufacture. It costs too much to make it. On the other hand, when measured by economy of fuel, excellence of material and manufacture, ease of operation, steady speed and remarkable power, it is in our judgment very much the cheapest engine in the market.

Send for a general description, circulars and catalogues to the local agency, at 122 W. 2nd st., Los Angeles, Cal.

Cripple Creek.

It will not take long for the Cranmer Bros. to be ready to treat ore, as the machinery for their new stamp mill at Elkton has arrived.

Returns from the last shipment from the Pharmacist have been received. There are ten tons of high grade ore that went \$85, and forty-five that averaged \$30.40 per ton.

The last shipment from the Arcadia, which consisted of forty-five tons, averaged \$80 per ton. It netted, after freight and smelting charges were paid, \$3,500. Another shipment will be sent out in a few days. The grade of this ore is believed to be better than the last.

Eight feet of ore and only one wall in sight is what is now showing in the bottom of the 24-foot shaft on the Lindsay lease on the Arequa townsite. With such a mass of mineral it is no trouble to get out ten tons each twenty-four hours, and that is what the manager intends to do from now on. The quartz is divided into two grades that sample respectively about \$50 and \$100 to the ton.

The eighth station of the Independence mine is being cut, and is as many hundred feet from surface. No attempt to drive it ahead will be made, as Mr. Stratton intends concentrating every effort in getting the shaft to the thousand-foot mark before he might possibly be drowned out with water. The mine itself is producing about the usual amount of ore, and is netting its owner easily anywhere from \$60,000 to \$100,000 per month. —Mail.

From a reliable authority it was learned that the Anaconda Copper company shipped during the year 1896: Copper, 125,350,693 pounds; silver, 5,433,826,747 ounces; gold, 17,411,3334 ounces. Copper shipments show an increase of 25,575,396 pounds over that of 1895. Silver shipments showed a decrease of 37,034,073 ounces and gold a decrease of 2,818,1164 ounces. The output for 1897 will certainly show an appreciable gain over the year past as the mines are better developed and equipped for the extraction of the ore.

PERSONAL—NEWS ITEMS

At the twenty-seventh annual session of the American Institute of Mining Engineers, held in Chicago last week, the following officers were elected: President, George S. Brown, South Bethlehem, Pa.; vice-presidents, D. W. Branton, Aspen, Colo., W. E. Eustis, Boston, James Douglas, New York City; managers, C. W. Goodale, Butte, Mont., Frank Lyman, Brooklyn, Frank M. Stanton, Houghton, Mich.; treasurer, Theodore D. Rand, Philadelphia; secretary, Rossiter W. Raymond, New York City.

Dan McGilvery is now driving a quarts team for Stewart & Harrington at Sodaville, Esmeralda Co., Nevada.

John S. Jones, of Chapparral, Yavapai county, Arizona, one of the leading mining men of the territory, was in Phoenix the 24th ult.

F. J. Johnson, of Johnson & Ritchie, assayers of this city, is going to Yuma, Arizona, to take charge of the Senator mine.

Dudley H. Norris, the well known lawyer has just returned to the City of Mexico from New York where he was successful in organizing a company to take up and operate a group of mines at Guanacavi, state of Durango.

Wm. Bolitho, superintendent of the Mammoth mine at Goldfields, Arizona, was in Phoenix the 23rd of February.

D. Driscoll, of Deadwood, South Dakota, was in Bland, New Mexico, the 19th ult., to settle up his brother's, John J. Driscoll, affairs.

E. C. Englehardt has accepted the position of superintendent of the Page Reduction works, now being built at Florence, Colorado.

D. B. Gillett and Lester Jackson, the mining men, returned February 21st, to Prescott, Arizona, from a visit to the Santa Maria county.

George Marsh has recently returned to Bland, New Mexico, from a trip to Santa Fe, where he went on important mining business.

P. T. Farnsworth has been appointed general manager of the Mammoth Mining company, Utah.

Arthur H. Wallace of San Francisco, a representative of the Haggin & Hearst mining firm, was in Prescott the 22nd ult., on mining business.

Ex-Sheriff Cunningham, of Santa Fe, has gone to Mexico where certain mines he is interested in, have begun to make a big showing.

A. B. McCaw has returned from New York and is investigating some Calaveras county property.

H. J. Allen, the general manager of the United Verde mines, at Jerome, after spending a few days in Phoenix, Arizona, returned home.

Mr. John St. Clare Mack, the organizer of the Cliff Mining and Smelting company at Chloride, New Mexico, returned February 19th, to the above place from a business trip to Denver.

State Geologist T. A. Rickard, of Colorado, has returned to Denver from an eastern Oregon trip.

W. L. South, a Denver mining man, is in Phoenix, Arizona, to inspect some promising claims near that city.

Chas. Boyless has taken the position of assistant assayer at the smelter at Chloride, New Mexico.

Charles Butters left San Francisco Tuesday, February 16th, for London on his way to South Africa.

J. H. Shackley, a prominent mining man of Denver, is in Phoenix, Arizona, examining some mining properties near the latter place.

Chas. F. Smith, of the Cliff Mining and Smelt Co., of Chloride, New Mexico, has returned to his home at McGregor, Texas.

Chas. R. Wores has removed his sampling works from Tucson, Arizona, to Johannesburg, Cal.

Col. Frank C. Hatch returned to Phoenix, Arizona, Monday, February 22nd., after an absence of eight months, much of the time having been spent in Costa Rica where he secured some valuable concessions in the way of coffee lands and mining property.

J. B. Petrie and John Yapple, two of Grafton's most thrifty miners, were in Chloride, New Mexico, one day last week.

Jno. L. Neagle is president of the Hydro Smelting and Refining company, Tacoma, Wash.

Chas. F. Kuhnlen, of Casa Grande, Arizona, was in Tucson the 23rd ult., with his son Adolph.

Judge Carrington, president of the Montezuma Gold Mining and Placer company, who has been over in Red River for a few days, returned to Elizabethtown.

Col. J. H. Polk was a passenger north on the steamer Orizaba Monday, February 15th., from Mazatlan. He has resigned the management of the celebrated Mina de Tajo at Rosario in Sinaloa, and on his return to Mexico will assume control of the Santa Gertrudis mines at Pachuca in the state of Hidalgo.

M. E. Macdonald has resumed the position of superintendent of the Gibbonville, Idaho, properties of the American Development company.

Benj. Williams, of the Copper Queen company of Bisbee, Arizona, has just returned to the camp from a trip to Mexico on business connected with the mine.

Frank Milestead, one of the most successful and reliable mill men of the west, resigned his position as superintendent of the "Helen" mining company's mill at Graham, Grant county, N M and has returned to Silver City.

H. F. Hartzell, one of the owners of the Viznaga mine at Alamo, Lower California, returned to Los Angeles last week.

Thomas Currans, president of the Silver King mining company of Utah, has recently been in California, looking over our gold fields.

Walter Douglass of Bisbee, Arizona, has just returned to the above place from Mexico where he went in the interest of the Copper Queen mine.

Harry Whigham, general manager of the Blossburg coal mines, left Raton, N M, on a business trip to Chicago.

W. A. Davis, of the Viznaga mine at Alamo, Lower California, Mexico, has just returned to Los Angeles.

G. M. Hyams, consulting engineer of the Boston and Montana, and identified with the reorganization of the Butte and Boston company, is in California to inspect the Merced gold mining properties, in which company he is also interested.

E. J. Curson, president of the Crescent coal company of Gallup, New Mexico, arrived in Phoenix, Arizona, the 24th ult., from his home in Los Angeles.

Aug. J. Bowie, jr., has returned from the east, and will begin the practice of his profession in this state. Mr. Bowie graduated with honors at Harvard, and later at the Massachusetts Institute of Technology, took degrees in both electrical and mining engineering at the same time, and with honors, the first time this has been done.

Frank Roger, of Mercur, Utah, left for Conder, Nevada, Tuesday, 23rd ult., where he has accepted a responsible position in a gold copper property.

We are informed that H. Grafton Vercoe, son of H. B. Vercoe, formerly of the Gavilan gold mines, Perris, has taken the management of the Copper King mine, Fresno, Cal.

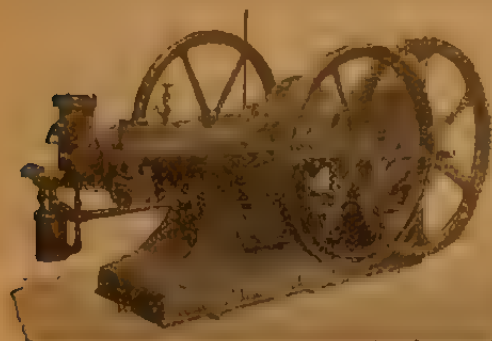
T. H. Johnson, formerly connected with the Denver Engineering Works company, has left Denver for Los Angeles to take a permanent position with C. B. Boothe & Co.

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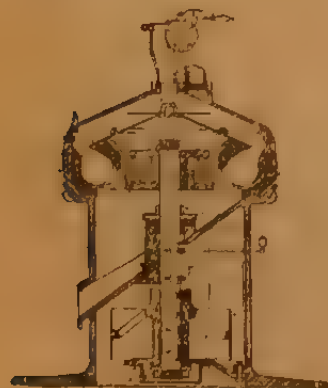
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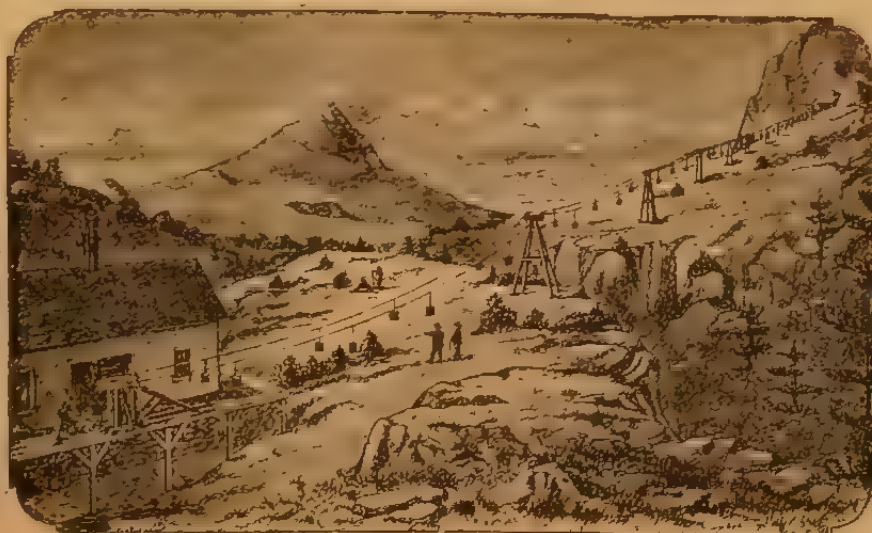
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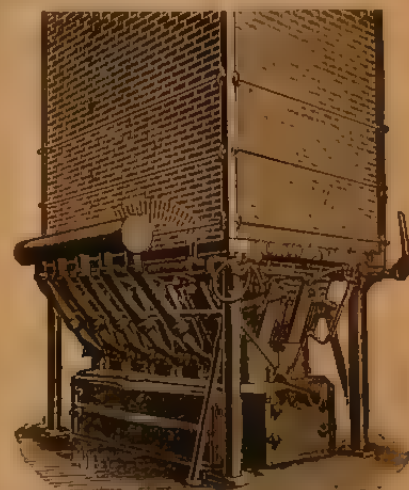
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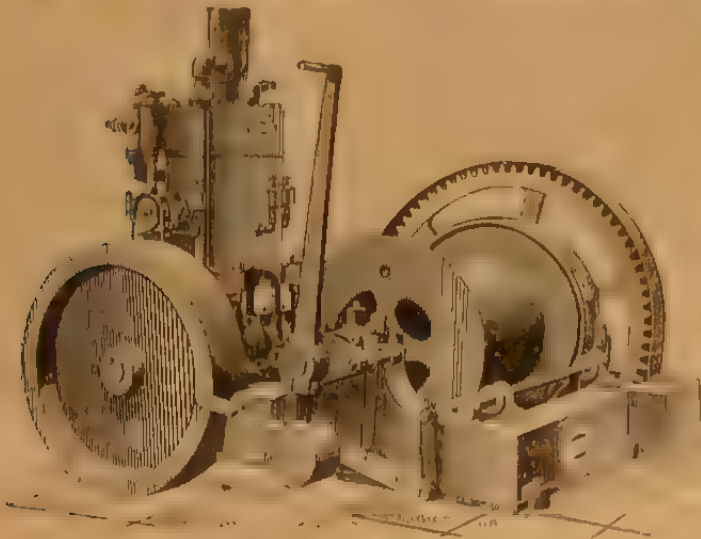
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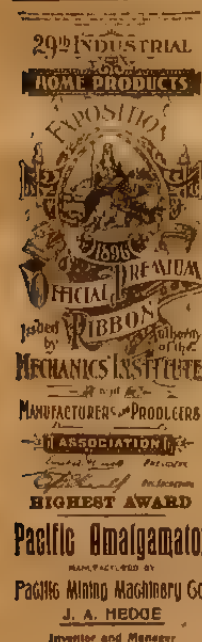
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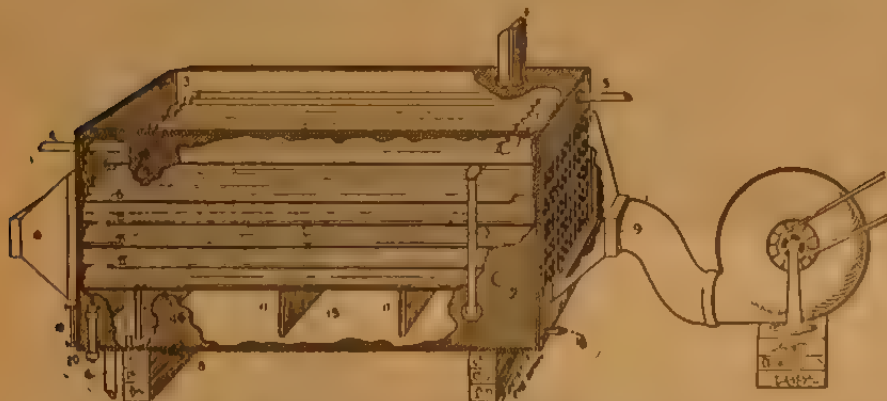
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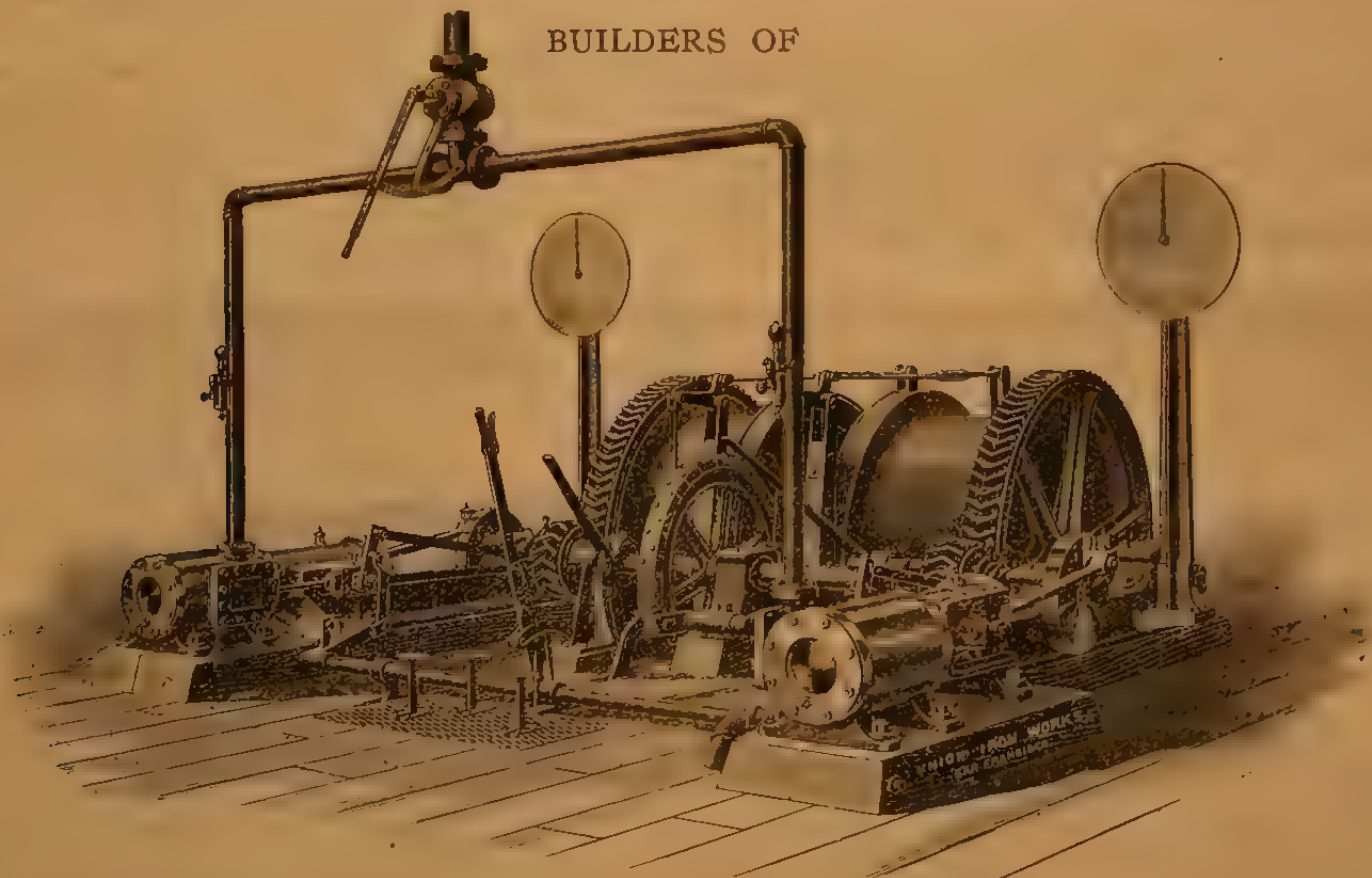
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| " 22 | 64 1/2 | 12 00 | 2 05 |
| " 23 | 64 1/2 | 12 00 | 3 05 |
| " 24 | 64 1/2 | 12 00 | 3 05 |
| " 25 | 64 1/2 | 12 00 | 3 05 |
| " 26 | 64 1/2 | 12 00 | 3 05 |
| " 27 | 64 1/2 | 12 00 | 3 05 |
| " | ... | ... | ... |
| " | ... | ... | ... |

MINING STOCK QUOTATIONS

| BOSTON | | | |
|----------------|--------|-----------|--------|
| Allouez | 80 | Franklin | 10 00 |
| Atlantic | 18 00 | Kearns | 10 00 |
| Boston & Mont | 75 00 | Oreola | 23 00 |
| Butte & Boston | 1 50 | Quincy | 108 00 |
| Cal & Helca | 300 00 | Tamarack | 75 00 |
| Centennial | 2 00 | Wolverine | 4 50 |

| COLORADO SPRINGS STOCKS | | | |
|-------------------------|--------|------------------|--------|
| Aetna | 01 | Inley | 00 1/2 |
| Alamo | 00 1/2 | Iron clad | 00 1/2 |
| Anaconda | 1 19 | Isabella | 42 1/2 |
| Argentum Juariata | 12 1/2 | Isabella Stamp | 42 |
| Bangkok-Cora Belle | 02 1/2 | Jack Pot | 08 |
| Bankers | 14 1/2 | Jefferson | 11 1/2 |
| Ben Hur | 01 | Keystone | 08 |
| C & N | 01 1/2 | Matos | 15 1/2 |
| C & C & Manitou | 04 | Mollie Gibson | 08 |
| Creede & C C | 05 1/2 | Monarch | 08 1/2 |
| Croesus | 01 1/2 | Mount Rosa | 10 1/2 |
| C C Consolidated | 18 | Orion | 08 1/2 |
| Dea Moines | 02 1/2 | Orphan Bell | 11 1/2 |
| Fannie Rawlins | 07 1/2 | Pharmacist | 10 1/2 |
| Favorite | 10 | Portland | 1 25 |
| Franklin | 01 1/2 | Peoples | 09 1/2 |
| Garfield Grouse | 08 1/2 | San Antonio | 08 1/2 |
| Golden Eagle | 03 | Specimen | 08 1/2 |
| Golden Gate | 90 | Star of the West | 00 1/2 |
| Gold & Globe | 18 1/2 | Trachyte | 02 1/2 |
| Gold Standard | 05 1/2 | Union Gold | 20 |
| Humboldt | 02 | Virginia M | 03 |
| Ingham C | 10 | Work | 08 1/2 |

| DENVER STOCK REPORT | | | |
|---------------------|--------|-----------------|--------|
| Aetna | 01 | Elkton | 1 50 |
| Alamo | 00 1/2 | Eureka | 00 1/2 |
| Anaconda | 1 24 | Garfield Grouse | 09 1/2 |
| Arcadia | 00 1/2 | Golden Fleets | 10 |
| " Consolidated | 10 | Goldsmith | 00 1/2 |
| Argentum Juniata | 48 1/2 | Gold Standard | 05 1/2 |
| Bangkok-C-Bell | 02 1/2 | Inley | 00 1/2 |
| Bankers | 14 1/2 | Iron Clad | 08 1/2 |
| Ben Hur | 01 | Isabella | 42 1/2 |
| Bob Lee | 02 | Jack Pot | 08 |
| Boston & C O | 01 1/2 | Jefferson | 11 1/2 |
| Chimbarazo | 01 1/2 | Mollie Gibson | 08 1/2 |
| C & N | 13 | New Zealand | 08 1/2 |
| Colo. C. & M | 04 1/2 | Peoples | 08 1/2 |
| C C Con | 18 1/2 | Pharmacist | 10 1/2 |

| HELENA, MONTANA | | | |
|-----------------|------|---------------|------|
| Alice | 25 | Granite Mount | 1 00 |
| Bald Butte | 2 55 | Hope | 1 50 |
| Benton Group | 10 | Iron Mountain | 42 |
| Bi-Metallic | 3 00 | Ontario | 1 00 |
| Elizabeth | 10 | Poorman | 48 |

| NEW YORK. | | | |
|-----------------|-------|-----------------|-------|
| Crown Point | 45 | Sierra Nevada | 86 |
| Con. Cal. & Va. | 1 80 | Standard | 2 75 |
| Gould & Curry | 80 | Union Con | 53 |
| Hale & Norcross | 1 25 | Iron Silver | 10 |
| Homestake | 80 50 | Quicksilver | 3 00 |
| Mexican | 50 | Quicksilver pfd | 17 02 |
| Ontario | 14 50 | Bulwer | 25 |
| Ophir | 1 20 | Yellow Jacket | 25 |
| Plymouth | 20 | Deadwood | 45 |

| SAN FRANCISCO. | | | |
|-----------------|------|---------------|----|
| Alta | 10 | Mono | 15 |
| Belcher | 27 | Nevada Queen | 50 |
| Beat & Belcher | 88 | Ophir | 95 |
| Bodie Con | 55 | Potosi | 95 |
| Chollar | 2 25 | Savage | 75 |
| Con. Cal. & Va. | 1 80 | Sierra Nevada | 53 |
| Crown Point | 45 | Union Con | 45 |
| Hale & Norcross | 1 25 | Utah | 11 |
| Mexican | 55 | Yellow Jacket | 45 |
| Gould & Curry | 85 | Bulwer | 25 |

| ST. LOUIS. | | | |
|-----------------|------|-------------|------|
| American Nettle | 25 | Elizabeth | 28 |
| Granite Mt. | 1 50 | Leo | 7 |
| Adams | 60 | Hope | 1 48 |
| Bi-Metallic | 3 30 | Small Hopes | 90 |

| SALT LAKE CITY | | | |
|----------------|--------|------------------|--------|
| Ajax | 30 | Horn Silver | 2 05 |
| Alliance | 35 | Little Pittsburg | 01 1/2 |
| Am. Nat. G's | 00 1/2 | Lucky Bill | 22 1/2 |
| Anchor | 1 25 | Mammoth | 2 00 |
| Boggs | 15 | Mercer | 8 15 |
| Bull, Beck | 8 00 | Ontario | 10 00 |
| Cent. Eureka | 75 00 | Rover | 27 1/2 |
| Dalton | 02 1/2 | Silver King | 17 25 |
| Daly | 7 50 | Sioux Con | 95 |
| Daly West | 8 50 | Swansea | 2 48 |
| Four Aces | 30 | So Swansea | 1 00 |
| Galena | 1 50 | Tetro | 02 |
| Geyser | 1 00 | Utah | 1 45 |

| MEXICO | | | |
|----------------------|----------------|-------|-----|
| Name of Company | State | Price | |
| Angustias | Guanajuato | \$ | 400 |
| Asturiana & Anexas | Zacatecas | | 440 |
| Cerro Colorado | Chihuahua | | 10 |
| Concepcion & Anexas | S. Luis Potosi | | 100 |
| El Oro | Guanajuato | | 80 |
| do. pre. | " | | 80 |
| Luz de Borda | Michoacan | | 30 |
| do. Free stock | " | | 30 |
| Luz de Maravillas | Hidalgo | | 110 |
| Real del Monte | " | | 350 |
| Rosario & Anexas | Durango | | 70 |
| do. pref. | " | | 50 |
| San Rafael del Oro | Guanajuato | | 80 |
| Sta. Gertr & Anexas | Hidalgo | | 187 |
| do. Free Stock | " | | 391 |
| Sta. Maria de la Paz | S. Luis Potosi | | 500 |
| Tlaquingo | Puebla | | 00 |
| Zomelahuacan (gold) | Vera Cruz | | 01 |
| Zona Min. de Pozos | Guanajuato | | 95 |

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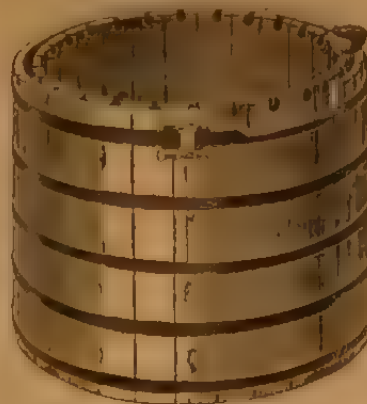
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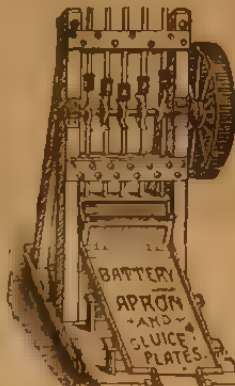
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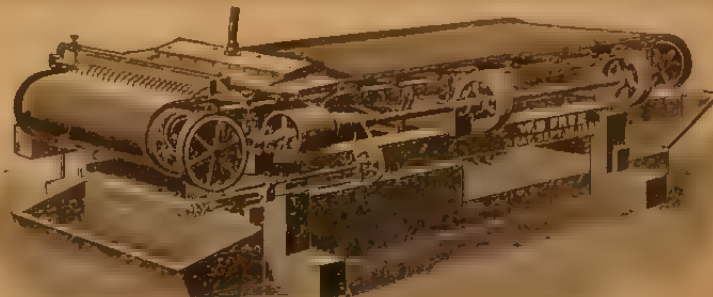
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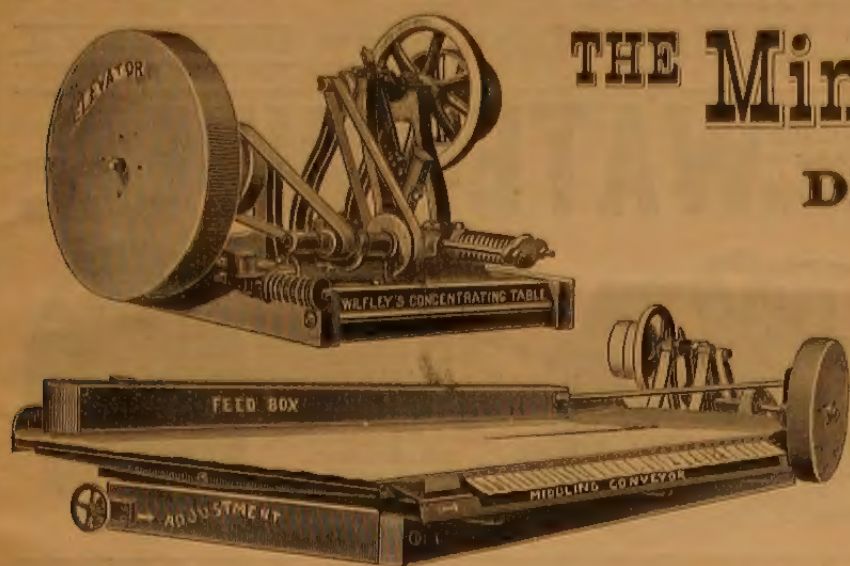


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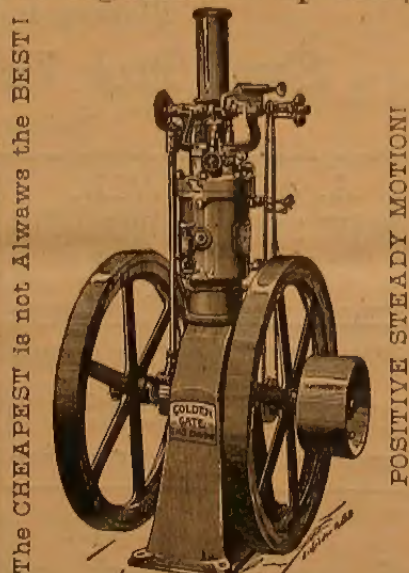
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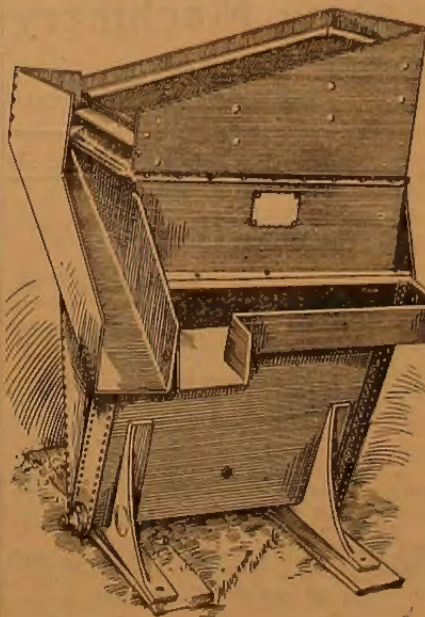
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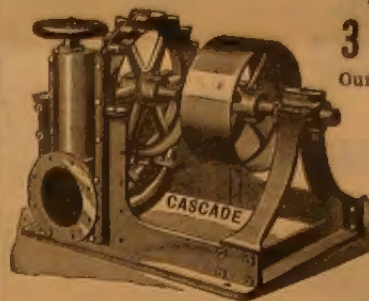
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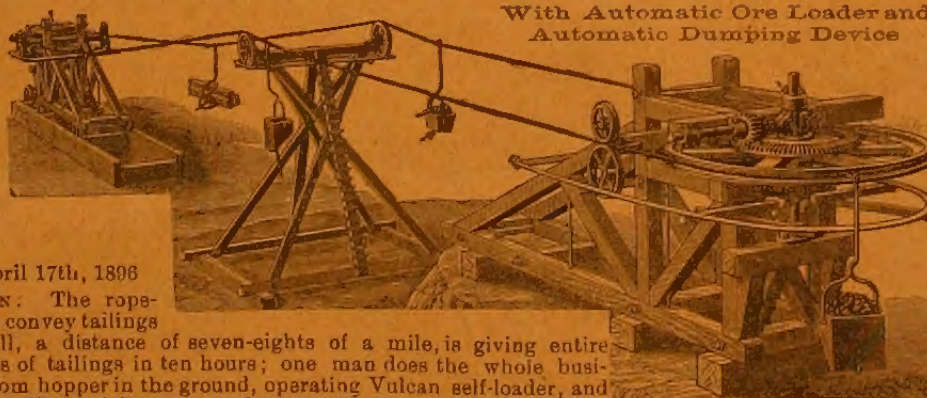
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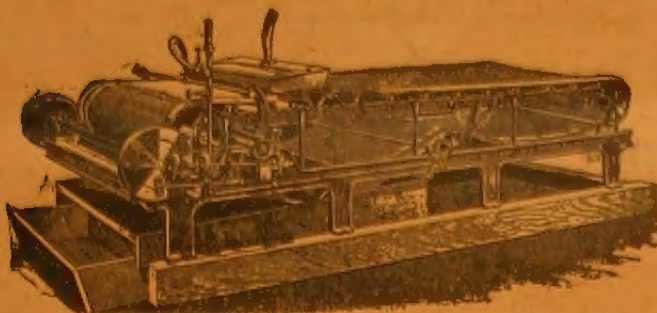
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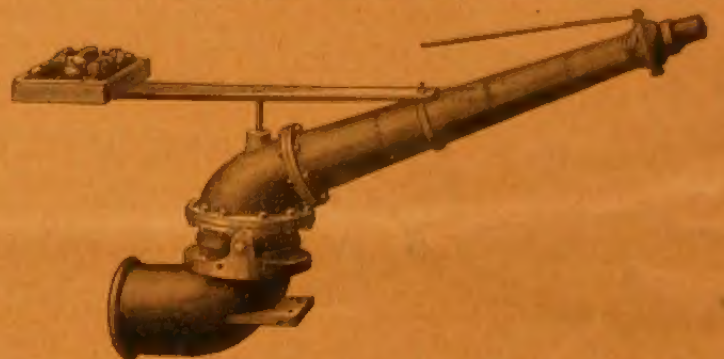
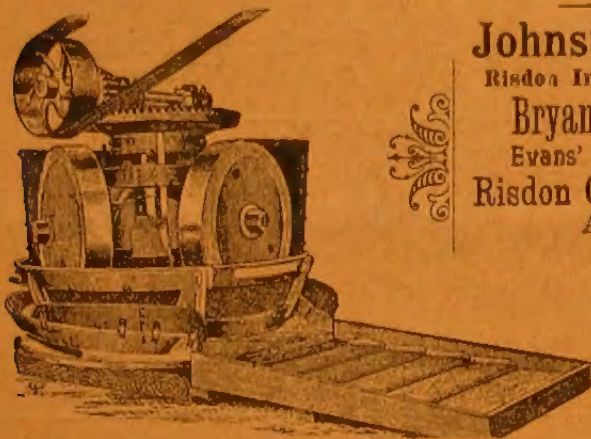
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